

REMARKS

Claims 2-13 and 17-25 are pending in the above-identified application. Claim 1 was previously withdrawn from consideration. Claims 2, 8 and 12 are herein amended. No new matter has been entered. Claims 23-25 are herein canceled. It is respectfully submitted that this Amendment is fully responsive to the Office Action dated May 16, 2006.

Specification

Applicants appreciate the Examiner's reminder that "Applicant is required to amend the disclosure to include the material incorporated by reference, if the material is relied upon to overcome any objection, rejection, or other requirement imposed by the Office." However, Applicants are not aware of any essential material that is not included in the specification.

Claim Rejections - 35 U.S.C. §103

Claims 2-3, 5, 8-9, 12, 17, 19-20, 22-25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant's Admitted Prior Art ("APA") in view of *Yamanaka et al.* (U.S. Pub. 2003/0186537). To expedite prosecution and clarify the subject matter of the present invention, Applicants hereby amend claims 2, 8, and 12 to incorporate the features recited in canceled claims 23-25, respectively. In view of these amendments and the following remarks, Applicants respectfully request that the Examiner withdraw the obviousness rejection of these claims.

Applicants respectfully submit that the Examiner has failed to present a *prima facie* case of obviousness. For example, the combined teaching of the cited references does not teach or suggest all the claim features of the present invention. For instance, as clarified by amendment, the plasma process is performed after both of the wiring trench and the via hole are formed in the present invention. Accordingly, all of the side surfaces of the interlayer dielectric film exposed to the wiring trench and the via hole can be protected.

However, in *Yamanaka*, although plasma process is performed as shown in FIG. 7C, a trench 11 is formed after the plasma process as shown in FIG. 7F. In other words, a part of the interlayer dielectric film (organic – material – containing silicon oxide film 5) to which the plasma process has been performed is removed. Therefore, the effect of the plasma process cannot remain at the side surfaces of the trench 11 and at all in *Yamanaka*. Consequently, when a first protective film 4 is removed (FIG. 7G), a part of the organic – material – containing silicon oxide film 5 exposed to the trench 11 cannot be protected at all. Accordingly, in *Yamanaka*, the part exposed to the trench 11 should retreat (FIG. 8D in the present application). Besides, the figure of the trench 11 has a large influence over the electric characteristics of the semiconductor device. As a result of the retreat, the method taught by *Yamanaka* cannot secure sufficient electric characteristics.

In view of the remarks above, even if one were to combine the APA and *Yamanaka*, the resultant combination would not be the claimed invention, e.g., instead merely a dual damascene method in which a trench is formed after plasma process.

Moreover, *Yamanaka* appears to teach away from the present invention. For example, the plasma process in *Yamanaka* is performed in order to (in advance) prevent problems during formation of the trench; therefore, the plasma process is not performed after the trench is formed in *Yamanaka*. In view of this, Applicants respectfully submit that one skilled in the art would not be motivated to combine the cited references.

In view of the remarks above, Applicants respectfully request that the Examiner withdraw the obviousness rejection of claims 2-3, 5, 8-9, 12, 17, 19-20, 22-25.

Claims 4, 6-7, and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over APA in view of *Yamanaka*, as applied above, and further in view of *Tonegawa et al.* (U.S. Pub. 2003/0155657). However, Applicants respectfully submit that these claims depend from independent claims 1, 8, and 12 and are likewise allowable by nature of dependency in view of the remarks above.

Conclusion

In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

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Amendment under 37 C.F.R. §1.111
Amendment filed: August 16, 2006

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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